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AUTHOR Kenrick, Douglas T.; Johnson, Gregory A.
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ABSTRACT

The influence of aversive conditions on interpersonal attraction was investigated using 60 female undergraduates as subjects. Dyads were formed and equally divided into aversive (loud-noise) and neutral (low-noise) conditions. After completing an attitude survey questionnaire subjects completed a short filler task while the experimenter constructed bogus attitude surveys based on each subject's responses. Subjects were then separated, and rated each other on the experimental bogus response using the Interpersonal Judgment Scale under noise conditions similar to the earlier ones. Results supported the hypotheses that aversive circumstances lead to decreases in attraction for simulated strangers who are not physically present and also result in increases in attraction for "real" strangers actually present during exposure to aversive stimuli. (Author/HLM)

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Interpersonal Attraction Under Negative Conditions: A Problem for the Classical Conditioning Paradigm?

Douglas T. Kenrick and Gregory A. Johnson

Montana State University

Requests for reprints should be addressed to: Douglas T. Kenrick
Psychology Department
Montana State University
Bozeman, Montana 59717

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Abstract

Studies investigating the influence of aversive conditions on interpersonal attraction have shown contradictory results. Several studies have found decreased attraction for a stranger rated under aversive conditions, and have been used to support a model which views attraction as a function of simple generalization of affect. A number of studies, however, have failed to support such a model; not only failing to show decreases in attraction as a function of negative circumstances, but often showing the reverse, i.e., enhanced attraction under aversive conditions. While these results can, in fact, be seen as compatible with reinforcement principles, a problematic inconsistency in the empirical literature remains. A review of the conflicting studies suggests that studies which have been seen to support the simple affective generalization may be limited in ecological validity as a function of their use of a "simulated stranger" paradigm. Original data is reported to support the contention that while aversive circumstances lead to decreases in attraction for simulated strangers who are not physically present, they result in increases in attraction for "real" strangers who are actually present during exposure to the aversive stimuli.

Interpersonal Attraction under Negative Conditions: A Problem for the Classical Conditioning Paradigm?

Research stimulated by the reinforcement model of attraction (Byrne, 1971; Clore & Byrne, 1974; Lott & Lott, 1974) has produced an abundance of evidence supporting the idea that persons will come to like others associated with positive affect, and dislike others associated with negative affect. With regard to the latter phrase of this proposition, a number of studies done to test a classical conditioning model of attraction have in fact shown that arousal of aversive affect leads to decreased interpersonal attraction (Gouaux, 1971; Griffitt, 1970; Griffitt & Veitch, 1971; Veitch & Griffitt, 1976). There is at the same time, however, a large body of seemingly contradictory findings. For instance, anecdotal evidence suggesting that individuals often become highly attracted to one another under aversive circumstances (Byrne, Allgeier, Winslow & Buckman, 1975; Rubin, 1973 pp. 5-7) is supported by similar correlational findings (Driscoll, Davis & Lipitz, 1972; Rubin, 1973 pp. 228-230). Likewise, a number of experimental studies of attraction under aversive circumstances (Brehm, Gatz, Goethals, McCrimmon & Ward, note 1; Byrne et al., 1975; Dutton & Aron, 1974; Kenrick, Cialdini & Linder, in press; Latane, Eckman & Joy, 1966; Morris et al., 1976) have failed to show a classical conditioning effect, and often show the opposite pattern (i.e., aversive circumstances increasing attraction).

Although it is possible to interpret the latter findings as inconsistent with reinforcement principles (Berscheid & Walster, 1974), Kenrick and Cialdini (1977) suggested that these data could be parsimoniously

explained as consistent with a negative reinforcement model. Briefly, since the presence of others has been found to reduce aversive arousal arising from such situations (Back & Bogdonoff, 1964; Bovard, 1959; Conger, Sawrey & Turrell, 1958; Wrightsman, 1960), subjects in these experiments would be expected to find another's presence reinforcing, and hence reported attraction would be quite consistent with reinforcement principles. In the Dutton and Aron ('1973) study, for instance, there was evidence that the target person did in fact reduce subjects' anxiety levels (Dutton & Aron, 1973). According to this formulation, the classical conditioning model of attraction is not incorrect at all. In this case, it must simply be kept in mind that positive affect is aroused not only by the onset of a rewarding stimulus ("positive reinforcement") but also by the offset of a punishing stimulus ("negative reinforcement")[1]. Although such an account is consistent with the reinforcement formulation of attraction (Byrne, 1971; Clore & Byrne, 1974; Lott & Lott, 1974), there remains nevertheless a disturbing inconsistency in the literature, with one group of studies suggesting that we will come to dislike others we meet under aversive circumstances (e.g. Griffitt, 1970; Griffitt & Veitch, 1974), and another group of studies contradicting this suggestion (e.g. Driscoll et al., 1972; Dutton & Aron, 1973). We would thus seem to have a situation in which reinforcement theory has little predictive utility. However, if one compares those studies supporting the simple affective generalization model with those which fail to support the model, one very consistent difference emerges. In those studies lending support to such a model, the target person was not physically present. In the remaining studies, on the other hand, which

support an expanded negative reinforcement version of the model, the target person was actually present contiguous with the aversive stimuli.

In the Griffitt and Veitch (1971) experiment, for instance, subjects were exposed to conditions varying from "hot and crowded" to roomy and comfortable. As predicted, ratings of "strangers" were negatively influenced by both uncomfortable heat and by crowding. The strangers rated, however, were not the other subjects present in the experimental chamber but were simulated strangers (Byrne, 1971). In the Griffitt and Veitch (1971) experiment the simulated stranger was described as a student of the same sex as the subject, who had participated in another study during the previous semester. The subject was shown a copy of an attitude survey ostensibly filled out by this person (in actuality, the attitude ratings were filled out by the experimenter so as to appear to be either similar or dissimilar to the subject's own attitudes). Similarly, subjects in the Griffitt (1970), Gouaux (1971), and Veitch and Griffitt (1976), studies rated such an artificially simuluated stranger. Hence, when a target person is not physically present, there is reason to believe that negative affect generated by unpleasant circumstances will generalize to that other, leading to a negative impression.

The Dutton and Aron (1973) and Brehm et al. (Note 1) studies, on the other hand, had subjects (who were or were not expecting painful electric shock) rate a physically present confederate who posed as a fellow subject. In these experiments, there was increased attraction for the confederate under the relatively more aversive circumstances. Byrne

et al., (1975) likewise found increased attraction for same-sexed others under relatively more aversive circumstances, and suggest that these results "create potential problems within the larger context of the reinforcement-affect model of attraction" (Byrne et al, 1975, p. 11). Although this study also used a bogus attitude profile, however, subjects were led to believe that the profile had been filled out by a confederate who actually participated in the experiment along with the subject. Similarly, Latane, Eckman & Joy (1966) report highest attraction for same-sexed others who were present under relatively more fear-producing conditions, while in correlational studies of the influence of adverse conditions on attraction (Driscoll et al., 1972; Rubin, 1973) subjects reported their attraction toward actual dating partners. Here again, results seem contradictory to a simple classical conditioning model, indicating increased attraction under relatively more adverse circumstances. It would seem then, that results obtained using the bogus stranger method might not be readily generalizable to most situations involving actual interpersonal judgement under aversive conditions.

If our reasoning up to this point is correct, the inconsistent results of those studies investigating the influence of negative situations on attraction pose a problem not for the classical conditioning model as a whole but only for the generality of one derivation from that model, which has received support and general acceptance due to the use of a particular limited methodology.

At this point it should be noted that the validity of the "bogus stranger" technique has been the subject of a great deal of debate in a different area of interpersonal attraction research. The technique was originally devised as a means of determining the relationship of attitude similarity to attraction (Byrne, 1961; 1969; 1971). As such, it has the important advantage of precise control over the stimulus materials (Byrne, 1971; Byrne, Ervin & Lamberth, 1970). If researchers were to use actual individuals in studying the similarity-attraction relationship, they would not only face the overwhelming problem of inconvenience in attempting to match persons on degree of similarity, but once matched, it would be unlikely that subjects would make their attitudes public in any reliable manner (Byrne, Ervin & Lamberth, 1970). Use of the bogus stranger technique, however, has enabled careful and precise estimation of the exact relationship between similarity and attraction (e.g. Byrne and Nelson, 1965). Nevertheless, critics have suggested that results from such "bogus stranger" studies might not always generalize beyond the confines of the paradigm (Levinger, 1972; Murstein, 1971; Wright, 1971). In brief, the content of these arguments has been that results from observations of actual relationships will likely show a much weaker connection between similarity and attraction than that obtained using the laboratory paradigm. Byrne and his colleagues have entered into a lively dispute with these critics (e.g. Byrne, 1971; Byrne, Ervin & Lamberth, 1970; Clore & Byrne, 1974), noting that "a search for generalizability and applicability has

been an integral and successful part of the paradigm almost from its inception," (Byrne & Clore, 1974, p. 163). While agreeing that the effect in question may not always appear as clearly as it does in the laboratory, Byrne and his colleagues argue convincingly that the same effect is still there, but the complex operation of other variables may obscure it (Baron & Byrne, 1977; Byrne, Ervin & Lamberth, 1970). As they summarize the data in the area, "once all of the variables in the real-life situation are identified, they can be expected to operate just as they do in the laboratory," (Baron & Byrne, 1977, p. 212).

Returning to the connection between negative affect and interpersonal attraction, however, it would seem that the influence of negative environmental stimuli is not only weaker than one would expect on the basis of studies done within the bogus stranger paradigm, but would actually tend to be opposite in its influence on actual interpersonal attraction, even within the confines of a short first encounter in a laboratory setting. In effect, while it may generally be profitable to view a target person as a neutral stimulus to which reinforcement value may be conditioned, that same other individual even if s/he is a complete stranger, may actually take on a positive valence in threatening or aversive situations.

It could perhaps be argued that the conflicting findings with regard to the negative affect-attraction relationship might be due, instead, to methodological discrepancies other than those we have pointed to (e.g. use of differing levels of stimulus aversiveness). It is our contention that the data presented thus far seem, in themselves, to strongly support the resolution we have outlined. In order to control for the possible operation of other, perhaps less obvious factors, however, we conducted an experiment in which subjects evaluated both "bogus strangers" and actual strangers under identical aversive conditions. It was predicted that contiguously presented aversive stimuli would have the effect of decreasing attraction toward the "bogus stranger" while increasing attraction toward a stranger who had been physically present with the subject.

Method

Subjects

Subjects were 66 undergraduate females enrolled in introductory psychology at a western state university. They received credit toward their course grade for their participation. Subjects participated in groups of 2. Each member of a dyad came from a separate large introductory section. Four subjects (two dyads) were dropped from the experiment because they had prior acquaintance with their experimental partner and two were dropped because of suspicion about the rated profiles. The remaining 60 subjects were equally divided into the aversive and neutral conditions (described below).

Procedure

Subjects arrived for an experiment on "Environment and Judgment." Two subjects arrived at separate locations for any given experimental session, and were brought (individually) to the experimental room. Here the experimenter introduced them, asked if they had prior acquaintance, and then explained:

> As the experimental title indicated, we're interested in the effects of environmental stimuli on judgment. We're particularly interested in the effects of environmental noise. You two will be in the high (low) noise condition.
>
> The first task you'll be working on is simply an attitude survey. We ask that you do not discuss this with one another, since people are often strongly influenced by others on these things. We'll also be returning to a similar task later - so again, please do not discuss these with one another (all subjects complied with this request).

The experimenter turned on a noise tape at this point. Subjects in the aversive noise condition heard a tape which consisted of intermittent, unpredictable bursts of very loud noise (peaks were 95 db.) determined to be highly aversive in pre-testing.[2] Subjects in the control (low noise) condition heard the same tape played at a very low level (peaks were 32 db.). After completing the attitude survey questionnaire, subjects were given a short filler task while the experimenter constructed bogus attitude surveys based on each subject's

responses. Using a method based on Byrne's (1971) "method of constant discrepancy" a moderately similar profile was constructed for each subject (average discrepancy = 2 points on a 6 point scale). The experimenter then returned and explained:

> We'll be separating the two of you for the remainder of the experiment. I need one of you to come with me - it doesn't really matter which of you since there's another speaker in the other room playing the same noise tape.

The experimenter always chose the subject to his right and in actuality took her to an adjoining room where the same condition noise tape was being played. After separating the subjects, the experimenter explained to each:

> This part of the experiment involves interpersonal judgment when only a small amount of information is available. You'll be rating a girl who was in a completely different experiment earlier this year, and filled out an attitude survey similar to the one you've just completed. Please read the person's answers carefully and try to form an opinion about her.

The subject was given a sheet with the name "Jean Haverland." The other subject was given the same instructions, but was told that "You'll be rating (name of co-subject), the other girl in the experiment with you." Subjects were told that their ratings would remain "completely confidential," and were asked to give a "frank

and honest judgment." Subjects who first rated the "bogus stranger" were then asked to rate the "other subject" and vice-versa (in each case the subject received another moderate discrepancy profile). For half the subjects, the "other subject" had indicated that she would shortly be leaving the state (in response to an item tapping attitudes about differential funding for the major rival branch of the state university system), while half the subjects saw the same comment on the profile attributed to the "bogus stranger." Order was randomized. Similar statements have been included in earlier research using this technique (Byrne, 1971) to lead the subject not to expect future interaction with the partner.[3]

The noise tape (either aversive or control) was continued during the interpersonal judgment measures. The ratings were made on the standard Interpersonal Judgment Scale (Byrne, 1971). The "liking" and "desire to work" items were, in the typical fashion, summed to yield the major dependent variable. Following the ratings, the noise was terminated, and subjects were fully debriefed and thanked for their participation.

Results

It was expected that the results for the attraction measure would show an interaction of noise condition and type of stranger rated. Results, displayed in Figure 1 according to a 2 (between-noise level) x 2 (within-type of stranger) analysis of variance, indicate that our hypotheses were clearly supported, F (1,114) = 7.02, $p < .01$, for

this interaction. While ratings of the fictional stranger were significantly more negative in the aversive noise condition, F (1,56) = 4.80, $p < .05$ for this simple main effect, ratings of the "other subject" were affected in the opposite direction, F (1,56) = 6.21, $p < .03$. In addition, the main effect of the type of stranger indicated that "other subjects" were generally rated more positively than "bogus strangers", F (1,114) = 62.11, $p < .001$. The overall main effect of noise level was not significant, F (1,114) < 1.

Discussion

Our results are clear in supporting the hypothesis that, under negative conditions, the bogus stranger method yields results which are contradictory to those obtained using "real" others as target persons, even in a short-term laboratory encounter. Results obtained for bogus strangers are directly in line with those obtained in prior studies using this method (e.g. Griffitt, 1971; Griffitt & Veitch, 1974), while results for ratings of contiguously present others are consistent with the general findings of studies using this method (e.g. Byrne et al., 1975; Dutton & Aron, 1973; Latane, Eckman & Joy, 1975), eliminating the likelihood that other differences between these two groups of studies may have mediated the conflicting results.

Thus, the use of the bogus stranger technique in the present line of investigation is even more strongly subject to criticisms of its validity than is the case in similarity-attraction research (Levinger, 1972; Murstein, 1971; Wright, 1971), where the general accuracy of

the relationship, if not its intensity, seems to be ecologically valid (Byrne, Ervin & Lamberth, 1970; Clore & Byrne, 1974).

However, while our results oppose one specific deduction from the classical conditioning model, i.e., that persons come to dislike strangers whom they meet under aversive circumstances - they can in fact be seen to be in essential agreement with the overall reinforcement model. As we stated earlier, the failure of the simple classical conditioning model in this instance may stem from the fact that other persons function as generalized reinforcers under aversive circumstances (Back & Bogdonoff, 1964; Kenrick & Cialdini, 1977, Schachter, 1959; Wrightsman, 1960), and their negative reinforcement value (as potential reducers of aversive arousal) can generally be expected to outweigh any immediate generalization of negative affect. Thus, we remain in agreement with the basic assumptions of the Clore and Byrne (1974) model, while calling into question certain lower level deductions from that model.

Although such a negative reinforcement model is consistent with prior literature and seems the most plausible explanation of the present results, it should be noted that we do not directly demonstrate the reduction of aversive arousal in our data. While no plausible alternative explanation presents itself, future research investigating the mediator of these effects would be worthwhile.

The major point of this data is to suggest the severe ecological limitations of those earlier findings (e.g. Griffitt, 1970; Griffitt & Veitch, 1973) which social psychologists have widely accepted to mean "any event that arouses a negative emotional state may create a temporary

dislike for whoever is nearby" (Tedeschi & Lindskold, 1976, pp. 455-456). In discussing the effect of simple negative arousal on interpersonal attraction, results from studies using the bogus stranger paradigm would seem to explain only a rather limited range of situations - i.e., those in which one is evaluating another person who is not physically present. Whenever the object person is present, negative conditions would be expected to result in rather different effects on attraction.

It should be noted here that we are dealing only with the case of impersonal aversive or threatening environmental stimuli, from which it has been determined that individuals do in fact seek solace in the company of others (Burlingame & Freud, 1943; Marshall, 1951; McIntyre, 1971; Schachter, 1959; Wrightsman, 1960; Sarnoff and Zimbardo, 1961). We would not, for instance, expect the present results to hold in situations involving potential interpersonal embarrassment, where the presence of others has punishment, as opposed to reinforcement value. For instance, Sarnoff and Zimbardo (1961) found that while 95% of their subjects who expected painful electical shocks wished to wait in the company of others, the majority of those expecting to perform potential embarrassing behaviors expressed a desire to wait alone. Consistently, Griffitt and Guay (1969) found that their subjects showed decreased attraction for others who were present when the subject received esteem-damaging feedback (negative creativity ratings), even when that other was not personally responsible for the feedback. On the other hand, Jacobs, Berscheid & Walster (1971) found that females were more attracted to a male they met after receiving self-esteem

lowering feedback. In this case, however, the male was not present during the receipt of the feedback, but served to repair the subject's damaged self-esteem by expressing romantic interest in her.

Finally, it would be expected that other persons who are themselves directly responsible for inducing negative affect in an individual will come to be disliked, and there is an abundance of data to support this supposition (e.g. Burnstein and Worchel, 1962; Byrne & Rhamey, 1965; Griffitt & Guay, 1969; Hendrick & Taylor, 1971; Sigall and Aronson, 1969).

Footnotes

[1]This term is often mistakenly interchanged with the term punishment. As used by contemporary learning theorists (e.g. Rachlin, 1970), however, negative reinforcement refers to the termination of an aversive stimulus, while punishment refers to its onset, which of course has more or less opposite consequences.

[2]32 female subjects from the same population used in the experiment proper were exposed to either the high or low noise conditions while performing the initial task engaged in by experimental subjects (filling out the attitude questionnaire). They then responded to two questions designed to assess the aversiveness of the noise: "How annoying do you find this noise" (0 = not at all annoying, 100 = extremely annoying) and "How pleasant do you find this environment to be" (-3 = not at all pleasant, +3 = extremely pleasant). Mean ratings on the first item were 67.87 and 31.67 for the high and low noise conditions, respectively, $F(1,30) = 17.30$, $p < .001$. Similarly, the second item yielded mean ratings of -2.29 for the high noise and -0.72 for the low noise conditions, $F(1,30) = 14.27$, $p < .001$.

[3]This factor produced neither a main effect nor any interaction with the variables of interest in the present investigation (all $\underline{F}$s < 1), and will not be discussed further.

Reference Note

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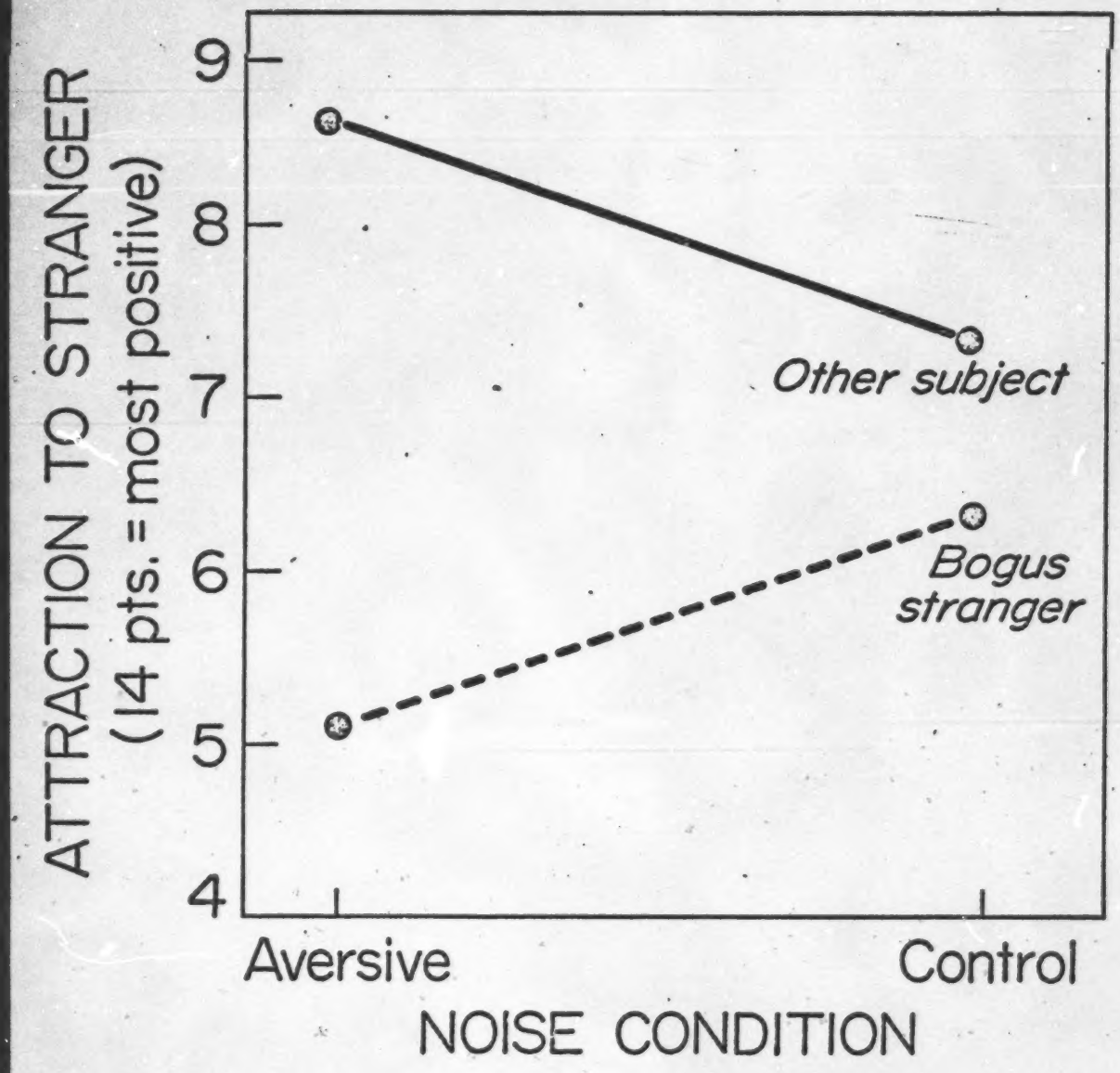
Figure Caption

Figure 1. Attraction ratings as a function of noise condition and type of stranger rated.


ATTRACTION TO STRANGER
(14 pts. = most positive)
9
8
7
6
5
4
Other subject
Bogus stranger
Aversive
Control
NOISE CONDITION